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of the United Nations

Forests & Transparency

Forest Data and Transparency: *'Zoom in'* on the
Experience of the **Democratic Republic of the Congo**

Rocío Córdor

Forestry Division (FAO)

23 September 2020



Key messages

- The Paris Agreement and its call for better and more transparent data are instrumental.
- A fully functioning multipurpose National Forest Monitoring System (NFMS) allows countries to respond to their own forest data needs .
- Forest data transparency is key to supporting higher levels of ambition for the roles of forests in climate change action.





FAO/GEF CBIT-Forest project

- A two-year (2019-2021) global project to step up developing countries' ability to collect, analyze and disseminate **forest-related data**, to make **forest data transparent, accessible and available** in line with the Enhanced Transparency Framework (ETF).
- Aims to increase institutional and technical **capacities** and to boost **knowledge-sharing** and **awareness-raising** about the ETF particularly in the forest sector.



How

- 26 countries targeted as well as 187 countries and territories included.
 - Strengthened network of key partners such as UNFCCC, GFOI, UNEP, UNDP, etc.
 - Upgraded FAO Global Forest Resources Assessment (FRA) reporting and dissemination platform, to make forest data reporting easier in the future.
 - Knowledge and training material, including E-learning course to enable access to knowledge about the ETF and forests to anyone anywhere.
- Outreach and sharing of case studies and best practices on transparency in the forest sector.
 - Tool developed to facilitate the assessment of gaps and needs in a country's NFMS.





Poster

Boosting transparency of forest data for climate action

<http://www.fao.org/3/ca9905en/ca9905en.pdf> (EN)

<http://www.fao.org/3/ca9905fr/ca9905fr.pdf> (FR)

<http://www.fao.org/3/ca9905es/ca9905es.pdf> (ES)



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Case study Costa Rica

Costa Rica's progress in developing a national land use, land cover and ecosystems monitoring system

Strengthening national capacities to monitor natural, agricultural and biodiversity resources to support decision-making and increase the ambition and effectiveness of climate actions

Context

The Republic of Costa Rica is a Central American country largely covered by tropical forest that embeds high biodiversity. The country has made many efforts to conserve its forest and biodiversity, although in most cases forest and agricultural resources have been independently assessed. Nevertheless, the interdependence of forest, biodiversity and agricultural resources has highlighted the need to develop a monitoring system that would allow consistent, integrated and comprehensive monitoring of all of these resources.

Since 2015, following a Ministerial Directive (DM-11-J-2015), the Government of Costa Rica has been developing a national system for monitoring land cover, land use and ecosystems (SIMOCUTE, Sistema Nacional de Monitoreo de la Cobertura y Uso de la Tierra y Ecosistemas) consisting of several integrated subsystems. SIMOCUTE constitutes the official platform for the integration and management of environmental data and information at national scale.

Actors and Stakeholders

The Costa Rican Ministry of Environment and Energy and the Ministry of Agriculture and Livestock are supporting the development of SIMOCUTE. The platform has been developed through a participatory and inter-institutional process led by the National Center for Geoenvironmental Information (CENIGA, Centro Nacional de Información Geoespacial). The overall process is supported by 40 institutions from government, academia and the private sector. The National System of Conservation Areas (SINAC, Sistema Nacional de Áreas de Conservación) is in charge of developing the national forest inventory and the national ecological monitoring programme, which aims to generate and disseminate reliable scientific information on the state and trends of the country's biodiversity and conservation efforts. SIMOCUTE is technologically and financially supported by 10 international organizations and is accessible at <https://simocute.gov.cr/>.



Objectives

- 1 Provide high-quality, consistent data on the status quo and any changes in land use, land cover and ecosystems at national scale.
- 2 Facilitate data management and distribution of knowledge and information associated with land use, land cover and ecosystems.
- 3 Strengthen national capacities for informed decision making on sustainable land management and maintain the quality and integrity of ecosystems and the environment for future generations.
- 4 Harmonize and align methodologies, protocols, classification systems, indicators, metrics and other tools related to land use, land cover and ecosystems.

Impact

- 1 Facilitating better access to data and mutual understanding of information related to forests, agriculture and ecosystems, encouraging transparency on emission reduction results and informed decision making.
- 2 Establishing six technical working groups to develop methods and protocols related to land classification, national forest inventory, agricultural land inventory, land use and land cover change (including ecosystems), mapping and registries.
- 3 Strengthening national capacities in data collection and analysis in a cost-effective way through 26 training sessions in 2019. Developing protocols and oriented documents and adapting some technological applications to monitor land use/land cover with user participation.

Success factors

Country ownership and responsibility: SIMOCUTE is implemented through inter-institutional coordination that began with 11 institutions and currently includes 25. Additionally, the monitoring system has initiated support for cooperation to respond to national needs.

Legal and policy basis: An interministerial decree regulating the functioning of SIMOCUTE is under final consultation and expected to be endorsed by the Minister of Environment and Energy, the Minister of Justice, the Minister of Agriculture and Livestock and the National Center for Geoenvironmental Information.

Landscapes approach: SIMOCUTE is an all-hands, multipurpose system allowing for the monitoring of natural ecosystems as well as agricultural and biodiversity resources.

Institutionalization: SIMOCUTE is led by CENIGA within the context of the National Environmental Information System (SINIA, Sistema Nacional de Información Ambiental). Clear roles and responsibilities are defined by legislation establishing the inter-institutional arrangements.

Participatory discussion process: Inter-institutional discussion has been promoted within the working groups.

Challenges

Challenges to be faced include: financial sustainability, continuing development and training programme, strengthening and implementation of institutional arrangements and data sharing policies, implementation of a web platform for transparency and quality.

Replicability and upscaling

Several exchanges and partnerships with other countries have been developed. For example, in May 2018, Ecuadorian technicians visited Costa Rica to exchange experiences on forest monitoring systems and forest fires. The exchange was facilitated by FAO and allowed the countries to identify synergies and potential South-South cooperation.

Rafael Munguía Vargas, Director of CENIGA at the Ministry of Environment and Energy (2020) has stated:

"With this process we have managed to improve our capabilities in the use of the most innovative tools in forest monitoring developed by FAO, which also provided us with new high-resolution satellite data. This helps us increase the capacity of SIMOCUTE to generate key information products for decision-making in the country."



High-level meeting with the Vice-Minister of Environment and Energy, Vice-Minister of Agriculture and Livestock, and international cooperation

Related resources

MINAE. 2017. Propuesta para el diseño del Sistema Nacional de Monitoreo de Cobertura y Uso de la Tierra y Ecosistemas. Versión 2. Government of Costa Rica, Ministry of Environment and Energy. <https://simocute.org/wp-content/uploads/2019/02/Propuesta-SIMOCUTE-V2-1.pdf>

SIMOCUTE. 2019. Diagnóstico de mapeo sobre cobertura y uso de la tierra y ecosistemas. San José, Sistema Nacional de Monitoreo de la Cobertura y Uso de la Tierra y Ecosistemas. https://simocute.org/wp-content/uploads/2019/08/Documento_sobre-diagnostico_mapeo_1482019.pdf



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Contact: cmga@minae.gov.cr; simocute@minae.gov.cr

This case study was developed under the project "Building global capacity to increase transparency in the forest sector (CBIF forest)" funded by the Capacity-Building Initiative for Transparency (CBIT) Trust fund of the Global Environment Facility (GEF).



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6 March 2020
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Case studies

Costa Rica

<http://www.fao.org/3/ca8618en/ca8618en.pdf> (EN)

<http://www.fao.org/3/ca8618fr/ca8618fr.pdf> (FR)

<http://www.fao.org/3/ca8618es/ca8618es.pdf> (ES)



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Case study Democratic Republic of the Congo

The Democratic Republic of the Congo establishes a national forest monitoring system to promote sustainable forest management.

Improving proactive monitoring of deforestation and forest degradation with a robust national forest monitoring system

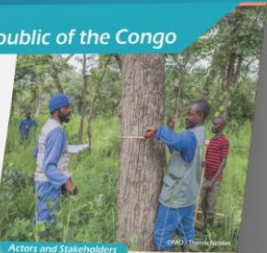
Context

In the Democratic Republic of the Congo, a Central African country, the reduction of emissions from deforestation and forest degradation is a major national strategic priority. Despite a relatively low deforestation rate compared with the world average, over the last 20 years the country has seen the highest rates of deforestation in its history. Previously, the Democratic Republic of the Congo had limited technical capacity to produce the tools necessary for monitoring forest cover and changes and for taking informed policy decisions on reducing emissions from deforestation/forest degradation and the sustainable management of forest resources.

Success factors

Multipurpose approach: The country's REDD+ National Fund (FONAREDD), which serves as a financial vehicle for the implementation of the national REDD+ strategy and is funded by CAF, utilizes the NIMS not only for international reporting to the UNFCCC but also as a tool that provides useful information to stakeholders outside the forestry sector, such as economic actors (working mainly in agriculture and mining) and investors, and for land use planning.

Participatory discussion process: The design and implementation of the NIMS have been supported by a range of participants including: the University of Lubumbashi, University of Kinshasa, Wildlife Conservation Society, World Resources Institute, Japan International Cooperation Agency, Satellite Observatory for the Forests of Central Africa, US Forest Service, the French Institute of Research and Development and non-governmental organizations such as SOS Nature, Forêtiers Tropicaux. Collaboration and coordination between relevant stakeholders has been strengthened through the use of *Plateforme Technique de Concertation (PTC)*, a platform for technical exchange on NIMS issues.



Actors and Stakeholders

The country's national forest monitoring system (NIMS) is implemented by the Sustainable Development Directorate (DDD; Direction du Développement Durable) and the Directorate of Forest Inventories and Management (DAF; Direction des Inventaires et Aménagement Forêtier) under the Ministry of the Environment and Sustainable Development (MED; Ministère de l'Environnement et du Développement Durable). The NIMS was initiated by the UNFCCC national programme and is currently supported by the Central African Forest Initiative (CAFI) with technical support from the Food and Agriculture Organization of the United Nations (FAO).

Objectives

- Produce high-quality, reliable data to monitor changes in land use, land cover and forest cover.
- Facilitate analysis and track progress made by REDD+ activities in forests at national scale.
- Strengthen national capacities on forest monitoring and disseminate information to all relevant stakeholders, including scientists, national political and development leaders, local communities, international policymakers and donors, conservationists, and the private sector.
- Provide information essential for the country to meet national and international reporting requirements under the United Nations Framework Convention on Climate Change (UNFCCC).
- Support the Government of the Democratic Republic of the Congo to make ecologically sustainable decisions and policy on land use, land cover and natural resources.

Challenges

The challenges to be faced are mainly associated with ensuring the sustainability and operational maintenance of the NIMS as well as the availability of funding. The coordination of the NIMS also presents challenges including the harmonization of methodologies and results.

Replicability and upscaling

The experience of the Democratic Republic of the Congo has been widely used as a basis for replicating the satellite land monitoring system (SLMS) in other countries by developing the software according to specific needs. The same capacity-building materials and training practices were used, adapted to the local context (data infrastructure, capacity). In order to effectively replicate the SLMS practice in other countries, a team of remote sensing and IT experts needs to be set up to ensure sustainability in terms of skills, data and maintenance. Examples of such SLMS platforms can be found in Africa, Asia and Mesoamerica, where FAO facilitated the creation of 30 web portals to disseminate forest-related geospatial data.

Testimony

Benjamin Tokambe, General Secretary of the Ministry of the Environment and Sustainable Development, has stated:

“The NIMS tools contribute to improving the management of our forests so that we could reduce the greenhouse emissions from deforestation and forest degradation. FAO plays a pivotal role in the capacity-building of our staff.”

Related resources

FAO, 2019. Programme de Finalisation et de Mise en Œuvre du Système National de Surveillance des Forêts de la République démocratique du Congo. Accessible at: www.fao.org/3/a/15339/fr15339.pdf

Results

- The collaboration between DDD and DAF and other relevant partners has been strengthened and a technical consultation platform ensures better coordination between partners. An inter-ministerial dialogue framework has been established to facilitate collaboration among relevant ministries.
- Technical capacity of 55 DAF officials (20 for satellite monitoring, 30 for the national forest inventory (NFI) and 5 from the sustainable development unit) has been strengthened to detect and monitor land cover change, to acquire and process satellite images, to plan, design and manage NFIs, and to analyse data and construct a forest reference emission level.
- 12 training sessions have been held on the use of SEPAL, interpretation of reference points in Collect Earth, change detection and estimation of forest degradation with Google Earth Engine, the utilization of BFAST in SEPAL for time series analyses, use of high-resolution satellite images (Planet Labs data), NFI field data collection including soil analysis, and data management, and construction of the greenhouse gas inventory. FAO and the United States Forest Service collaborated in organizing a number of trainings.
- Improved access to high-resolution satellite images has enabled more accurate estimates of GHG emissions. In 2018, a satellite monitoring system for the spatial development of commercial plantations was integrated into the country's NIMS, and in 2019 the country accessed high-resolution satellite images of its land area, fruit of collaboration between Planet Labs, Norway, FAO and the Democratic Republic of the Congo, along with seven other tropical forested countries.
- A South South Cooperation event between the Democratic Republic of the Congo and other African countries (Burkina Faso, Cameroon, the Republic of the Congo, Côte d'Ivoire and Madagascar) has strengthened the NIMS knowledge exchange network across the countries.
- The NIMS data will enable the country to review its Nationally Determined Contribution articulating the country's climate action plan as part of the Paris Agreement. Estimates of GHG emissions and removals will be improved to enhance understanding of the impact of various projects.

The Democratic Republic of the Congo is a good example of the consolidation of NIMS geospatial data within FAO's Hand-in-Hand (HiH) initiative, which aims to enhance transparency and focus on the eradication of poverty (SDG 1) and malnutrition (SDG 2). HiH is country-led and will utilize commercial, private, national and subnational data sets and continue to integrate national and subnational data. The platform will be able to include cross-sectoral data (climate, soil, carbon, forests, fisheries, production) and other specific data collected on agriculture in the preparation of the fourth national communication to the UNFCCC.



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The NIMS platform is accessible via nfs-and.org or info@medd.gov.cd

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Case studies

Democratic Republic of the Congo

<http://www.fao.org/3/cb0702en/cb0702en.pdf> (EN)

<http://www.fao.org/3/cb0702fr/cb0702fr.pdf> (FR)

<http://www.fao.org/3/cb0702es/cb0702es.pdf> (ES)



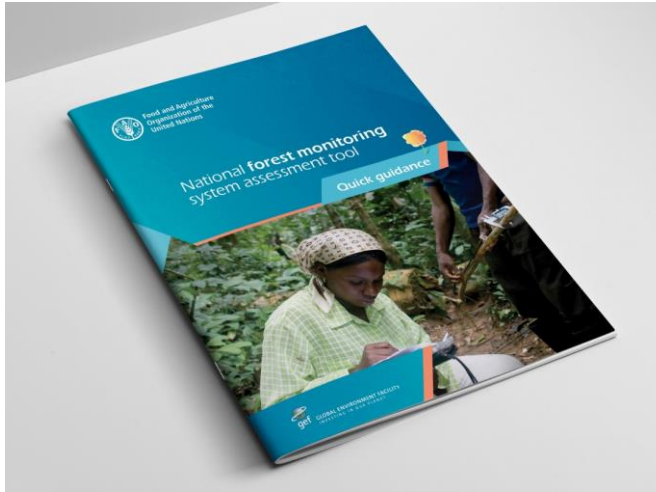
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National Forest Monitoring System (NFMS) assessment tool

How can a country benefit?

- ✓ Based on FAO's Voluntary Guidelines on National Forest Monitoring;
- ✓ Designed for country MRV/ETF needs and gaps assessment;
- ✓ Helps build a work plan;
- ✓ Helps measures progress;



Forests and transparency under the Paris Agreement



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Framework Convention on
Climate Change



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Lesson 1

LESSON 1

The Enhanced Transparency Framework and forests

Lesson 1 explains how the Paris Agreement charts a new course in global efforts against climate change, and illustrates the requirements under the Enhanced Transparency Framework (ETF), showing how they build on the Measurement, Reporting and Verification (MRV) framework.

The lesson also reviews the fundamental role of forests in absorbing and storing carbon from the atmosphere and highlights interrelations between the collection and analysis of forest-related data and the requirements foreseen under the ETF.

30 minutes

Lesson 2

LESSON 2

The National Forest Monitoring System

This lesson reviews the National Forest Monitoring System, its goals and scope.

It also illustrates the principles that should inform a sustainable National Forest Monitoring System and describes, through real examples, the key guidance elements required to strengthen national forest monitoring capacities, increasing their transparency and long-term reliability.

30 minutes

Lesson 3

LESSON 3

Forest data for the Enhanced Transparency Framework under the Paris Agreement

This lesson discusses how a National Forest Monitoring System (NFMS) that is informed by principles of transparency, accuracy, consistency, completeness and comparability enables countries to produce **reliable** and **transparent data**, and thus to meet the reporting requirements under the Enhanced Transparency Framework (ETF).

30 minutes



NFMS assessment tool

Free and accessible already in English, French and Spanish

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NATIONAL FOREST MONITORING SYSTEM ASSESSMENT TOOL - version 2

Based on the voluntary guidelines on national forest monitoring and REDDcompass

Date

Language English

Country

Institutional arrangements [Click here](#)

Measurement and estimation [Click here](#)

Reporting and verification [Click here](#)

Analysis [Click here](#)

BACK

Available at: <http://www.fao.org/23e16767o.pdf>

Quick guidance

<http://www.fao.org/3/cb0988en/cb0988en.pdf> (EN)



Information note

<http://www.fao.org/3/ca9903en/ca9903en.pdf> (EN)

<http://www.fao.org/3/ca9903es/ca9903es.pdf> (ES)

<http://www.fao.org/3/ca9903fr/ca9903fr.pdf> (FR)



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Information note

Strengthening national forest monitoring systems through a comprehensive capacity needs assessment

"A needs and gaps assessment aims to enhance forest monitoring and allows different stakeholders to get a full picture of the status of their national forest monitoring systems."

Julian Fox, Senior Forestry Officer, FAO



Significance of the new tool

Summary

A lack of institutional and individual capacity often undermines the long-term impact of otherwise technically sound programmes. To support efforts towards sound and impactful forest monitoring, the Food and Agriculture Organization of the United Nations (FAO) has developed a **national forest monitoring system (NFMS) assessment tool** to help countries identify capacity gaps and weaknesses in order to address their real needs in a targeted manner.

Context

The enhanced transparency framework (ETF) is a key element of the 2015 Paris Agreement. Under the ETF, robust data collection, analysis and dissemination of forest-related data are the basis for reporting on emissions and removals and tracking the progress of nationally determined contributions. Given the significant climate change mitigation potential of forests, improving the **transparency of forest-related data and information** within the ETF is timely, indeed urgent, in order to translate this potential into action.

Why support a capacity assessment?

A capacity assessment is a structured approach to analysing capacity across three dimensions: individuals, organizations and the enabling environment. In the context of forest monitoring, a capacity assessment aims to provide a broad picture of an NFMS, in terms of strengths, weaknesses and opportunities. Building an NFMS is a complex national-scale effort that must consider multiple institutional, technical and financial aspects. The system should increase **transparency, reliability** of the information produced and ensure a long-term perspective, through participatory processes that include multiple stakeholders with different skills, who must be identified and informed throughout. The stakeholders draw on their breadth of knowledge to identify needs and gaps in order to achieve a **robust and sustainable NFMS** that captures and delivers continuous information on a country's forests.

FAO's new NFMS assessment tool facilitates the identification of needs and gaps in order to establish or strengthen a country's forest monitoring. The tool is based on FAO's Voluntary Guidelines on national forest monitoring (VGNFM) reinforced with the REDDcompas resources of the Global Forest Observations Initiative (GFOI). It also incorporates 50 years of FAO experience gained in the field, working together with countries around the globe. The assessment tool, which provides an easy way to use and implement the VGNFM, is free, Excel-based and available in English, French and Spanish.

The tool supports the strengthening of an existing NFMS, including capacity assessment of the system and facilitation of dialogue with key national stakeholders, helping to pool their first-hand knowledge of a problem or development challenge and identify possible solutions. It also helps to identify the institutional dynamics, strengths, weaknesses and opportunities for improvement of an NFMS. A useful complementary series of guidance, good practices and practical tools based on local circumstances when running a capacity assessment, is available on FAO's Capacity Development website: www.fao.org/capacity-development.

What does the new tool consist of?

The NFMS assessment tool is aimed at country stakeholders responsible for forest monitoring through good practices. The tool presents good practice guidance and examples for three complimentary themes - institutional arrangements, measurement and estimation, and reporting and verification. The graphic highlights institutional arrangements as the foundation of a robust and sustainable NFMS, which the other two themes build on.

Measurement and estimation

- identification of information needs
- data management and archiving
- preparation
- design for field data collection and remote sensing
- operational design (field and remote sensing)
- data management, data analysis and documentation

Reporting and verification

- communication and dissemination
- preparation and submission of reports

Institutional arrangements

- institutionalization
- developing national capacity
- developing partnerships and collaboration
- strengthening research and research institutions in forest monitoring
- mandate
- stakeholder identification and engagement
- integration of young experts
- impact assessment

How can a country benefit?

The NFMS assessment tool aims to assist countries in strengthening their NFMS by:

- ❖ facilitating understanding of FAO's Voluntary Guidelines on National Forest Monitoring;
- ❖ identifying needs, gaps and weaknesses, enhancing opportunities to focus a country's efforts and investments;
- ❖ helping to organize international cooperation and build a work plan together with stakeholders and partners;
- ❖ assessing progress in identifying capacity gaps in forest monitoring;
- ❖ encouraging harmonization of processes to set up a stronger and more robust NFMS.

Conclusion

With tailored national forest monitoring systems, countries are able to develop informed forest and land-use policies with proven knowledge and up-to-date, reliable, transparent and accessible information. Efforts to support forest monitoring should focus on strengthening and enhancing the development of an NFMS.

Bibliography

FAO, 2017, *Voluntary Guidelines on National Forest Monitoring*. Rome. <http://www.fao.org/3/a-i6767e.pdf>
Global Forest Observations Initiative. REDDcompas: <https://www.reddcompass.org/#!/homepage>.

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The NFMS assessment tool was developed under the "Building global capacity to increase transparency in the forest sector (CBIT-Forest)" project, funded by the Capacity-Building Initiative for Transparency (CBIT) trust fund of the Global Environment Facility.

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Thanks for your attention

<http://www.fao.org/in-action/boosting-transparency-forest-data/en/>

CBIT-Forest@fao.org



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